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PATENT SPECIFICATION

615,246



Convention Dates
(Netherlands)

Corresponding Applications
in United Kingdom

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(One Complete Specification left under Section 91 (2) of the Patents and Designs Acts, 1907 to 1942.)

Specification Accepted: Jan. 4, 1949.

(Under Section 6 (1) (a) of the Patents &c. (Emergency) Act, 1939, the proviso to Section 91 (4) of the Patents and Designs Acts, 1907 to 1942 became operative on March 30, 1946.)

Index at acceptance:—Classes 45, E; 140, A2(f: g: h); and 145(ii), B7.

COMPLETE SPECIFICATION

Improvements in Methods of Producing Composite Plates or Sheets

I, HENDRIKUS FRANCISCUS WAARDS, of Zwabenburgerstraat 9, Amsterdam, Holland, a Dutch Subject, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

The present invention relates to methods of producing composite plates or sheets.

It is an object of the invention to provide a method of forming composite sheet materials or plates which are capable of use for various purposes, for instance for doors, the walls of rotary doors, furniture, wainscoting, walls of display windows, seating surfaces, the casings of radio receivers, light reflectors and the like.

It has previously been proposed to make up composite plates, which may, if required, be bent, by assembling a number of wooden laths parallel to each other and glueing thereto, on one or both sides, a connecting layer e.g. of veneer, wood, cardboard, artificial leather, canvas, thin sheet metal or like material. This process is costly and involves much loss of time.

A further object of the invention is to provide methods of producing composite sheets of the above character, which methods are comparatively simple, speed and inexpensive.

Thus, the invention comprises a method of producing composite plate or sheet material comprising a plurality of parallel or substantially parallel laths or strips of wood or other rigid material secured at one side to a connecting layer of veneer, cardboard, canvas, thin sheet metal or the like, characterised in that incisions, e.g. a plurality of parallel incisions, are formed in a plate, sheet or board from one surface thereof, a connecting

layer is adhered to this surface of the plate, sheet or board in which the incisions are made, and thereafter material is removed from the opposite surface of the plate, sheet or board so as to expose the incisions to the exterior.

When flexible plates or sheets are to be made, the product obtained is ready for use. When non-flexible plates or sheets are to be made, a second connecting layer is applied to the said opposite surface, necessary after having brought the plate into a bent or curved form.

The invention extends further to the method wherein the plate, sheet or board in which the incisions are made has its thickness so selected that it can be used for making additional composite plates or sheets. The process is then as follows: After having provided this relatively thick plate, sheet or board with incisions, a connecting layer is applied to the surface in which the incisions are made, whereupon the laminate obtained is separated in two parts by means of a saw-cut parallel or substantially parallel to the connecting layer, one of which parts is a composite plate or sheet as described, and the other is again a plate or board provided with incisions, which can be dealt with again in the manner described.

The method according to the invention may also be carried out in such a manner that, after the first connecting layer is applied, a layer of material extending up to the incisions is removed from the opposite surface, whereupon a connecting layer is applied to the newly formed surface and then the laths or strips between both layers are severed by a saw-cut parallel to the layers so that two composite plates are obtained. If desired, this process can be repeated one or more times.

Another mode of carrying the invention

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into practice is to provide the plate, sheet or board on both sides with incisions but at the same time leaving some material between the ends of the incisions, or the incisions can be made so deep, that the ends of those from the one side of the plate or the like overlap the incisions from the other side. The incisions from one side of the plate must then enter between two adjacent incisions from the other side of the plate. In this case one single saw-cut parallel to the reinforcing layers will form two composite plates or sheets when a connecting layer has been applied on both sides of the plate or sheet.

When using the invention, a considerable simplification of manufacture is obtained, especially when flexible plates or sheets are being made. The correct assembling of a number of laths and their attachment to the connecting layer according to the known process, which took much time, is obviated by the method of the present invention. A process might be followed wherein the plate or sheet and the connecting layer are glued together and thereupon incisions are made in the non-glued surface. In this case it is, however, difficult to make the incisions exactly of the right depth. It will be appreciated that when they are too deep and exceed the thickness of the plate or sheet, the connecting layer is damaged whereas, when the incisions are of less depth than the thickness of the plate or sheet, the flexibility of the composite plate or sheet obtained is affected.

The incisions are preferably obtained by sawing. The removal of the material of the plate or sheet extending up to the ends of the incisions may be obtained by sawing planing or, preferably, by milling.

When the connecting layer and the plate, sheet or board are both of a material with substantially parallel fibres, as is the case with veneer and an ordinary wooden board, the incisions are preferably arranged parallel to the direction of the fibres of the plate or sheet whilst the connecting layer is arranged in such a manner that the fibres thereof extend in a direction transverse to that of the fibres of the connecting layer.

As the composite plates or sheets according to the invention are very flexible they can readily be used for splinting broken limbs. In this case the composite plate is bent around the broken limb and secured thereto.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A method of producing composite

plate or sheet material comprising a plurality of parallel or substantially parallel laths or strips of wood or other rigid material secured at one side to a connecting layer of veneer, cardboard, canvas, thin sheet metal or the like, characterised in that incisions, e.g. a plurality of parallel incisions, are formed in a plate, sheet or board from one surface thereof, a connecting layer is adhered to this surface of the plate, sheet or board in which the incisions are made, and thereafter material is removed from the opposite surface of the plate, sheet or board so as to expose the incisions to the exterior.

2. A method according to claim 1, characterised in that the original plate, sheet or board is of a substantial thickness and that, after the composite plate or sheet has been formed, a connecting layer is attached to the surface from which material of the plate, sheet, or board has been removed, whereafter the laminate obtained is divided into two composite plates or sheets by making a saw-cut through the body of the laminate parallel or substantially parallel to the connecting layers, which composite plates or sheets may, if required, be treated, by a repetition of the process, to form further composite plates or sheets.

3. A method according to claim 1, characterised in that after a connecting layer has been connected to the surface of the plate, sheet or board in which the incisions are made, the whole is separated, by means of a saw-cut parallel to the connecting layer, into two parts, one of which parts is a composite plate or sheet whilst the other is a plate, sheet or board provided with incisions, which can be treated in a similar manner.

4. A method according to claim 1, characterised in that the board, sheet or plate is provided with incisions on both sides, after which a connecting layer is glued to both sides of the board, sheet or plate, and the laminate so obtained is divided into two composite plates or sheets by means of a saw-cut or saw-cuts parallel or substantially parallel to the said connecting layers.

5. A method according to claim 4, characterised in that the incisions made from one side of the board, sheet, or plate are formed of such depth that their ends overlap the ends of the incisions made from the other side, the incisions from one side of the board entering between the ends of the incisions from the other side of the board.

6. The methods of producing composite plates or sheets substantially as herein described.

7. Composite plates or sheets when made in accordance with any of the preceding claims.

Dated this 30th day of March, 1946.

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